Part 3: Bicycle and Pedestrian Facilities

Overview

Federal transportation funding programs require transportation systems to provide facilities for bicyclists and pedestrians; hence, attention focused on these facilities has been steadily increasing. Federal legislation states that "Bicyclists and pedestrians shall be given due consideration in the planning process, and bicycle facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities except where bicycle use and walking are not permitted."

Non-motorized users are usually bicyclists and pedestrians. Current and previous non-motorized efforts in the region have focused upon recreational trails to serve as greenways making connections to cultural and activity centers. Little attention has been paid to on-street bicycle facilities. Census data shows a minimal level of involvement in bicycling or walking to work.

The 1996 Park and Open Space Master Plan identified significant deficiencies for parks and trails at a regional level. This section of the LRTP suggests an expansion of the non-motorized system to include more on-street facilities as well as targeting greater bicycle and walking opportunities. The opportunities can be identified utilizing US Census and regional safety data as well as public input.

Transportation Enhancement funds have been the major source of funding for the trail system. This section identifies the need to document and record funding for all varieties of bicycle and pedestrian facilities. It also compares funding sources to amount of trails needed.

Background

WAMPO's Unified Planning Work Program acknowledges that the transportation planning process must explicitly address 7 planning factors including increasing the safety and security of the transportation system for motorized and non-motorized users. Specific elements identified include:

- Review and refine "Pathways" map.
- Expand trail development through Notice of Interim Trail Use (NITU), particularly the preservation on abandoned railway right-of-way.
- Coordinate a "grass roots up" enhancement application process.

A good approach to non-motorized planning is to develop more bicycle and pedestrian friendly communities.

Bicycle and Pedestrian Friendly Community Checklist

Questions a Community Can Ask Themselves	
Bikeability Checklist	**Walkability Checklist**
Did you have a place to bicycle safely?	Did you have room to walk?
How was the surface you rode on?	Was it easy to cross the streets?
How were the intersections you rode through?	Did drivers behave well?
Did drivers behave well?	Could you follow safety rules?
Was it easy for you to use your bike?	Was your walk pleasant?
What did you do to make your ride safer?	

Table 3.3-1: Bicycle & Pedestrian Friendly Checklist

Answers to these questions (Table 3.3-1) can give a community an idea of how bicycle and pedestrian friendly they are. Although facilities are essential to create a bicycle/pedestrian friendly community, driver education, as well as land use policies play an important role.

Current System

WAMPO has implemented several bicycle and pedestrian oriented development plans. There are approximately 133 miles of bicycle paths and park trails and 433 miles of sidewalks in the region. Figure 3.3-1 shows a map of the existing, funded and potential bicycle/pedestrian facilities in the WAMPO region. Figure 3.3-2 is an insert from the same map to show the downtown Wichita area.

Facilities

A number of facilities make up the bicycle and pedestrian transportation system.

Existing Bicycle Paths

Bicycle paths provide a completely separated right of way designated for the exclusive use of bicycles thereby minimizing conflict points with motorists. All existing bicycle paths are 10 feet wide and their physical condition is rated above average. The 21st Century/Cheney bike path, the Arkansas River path, the Sedgwick County Zoo Park path and Derby path are all more than 10 miles long and provide recreation and transportation connections. Several other cities like Andover, Haysville, Maize and Mulvane also have good number of bicycle path miles.

Existing Bicycle Routes

On street bicycle routes provide a right-of-way designated by signs or permanent markings and are shared with motorists. An example of this design is a one mile, 10 ft wide Asphalt paved bicycle route in the City of Maize. Its physical condition is rated above average. There are a number of unofficial routes being used by bicyclists throughout the planning area.

Sidewalks

Walking is a fundamental form of transportation that is an integral part of the health and livability of communities in the region. To facilitate pedestrian access, the WAMPO region has approximately 433 miles of documented sidewalks constructed. The Central Business District of Wichita has about 18 miles of sidewalks. All the sidewalks are in above average condition. There are a few pedestrian bridges over physical barriers that enable walking for longer distances. WAMPO has also funded the Keeper of the Plains pedestrian bridge. Sidewalks are also integrated throughout the metropolitan communities. Each community decides the priority of sidewalks to plan their quality of life and human environment.

Bicycle and Pedestrian Facilities in the WAMPO Region

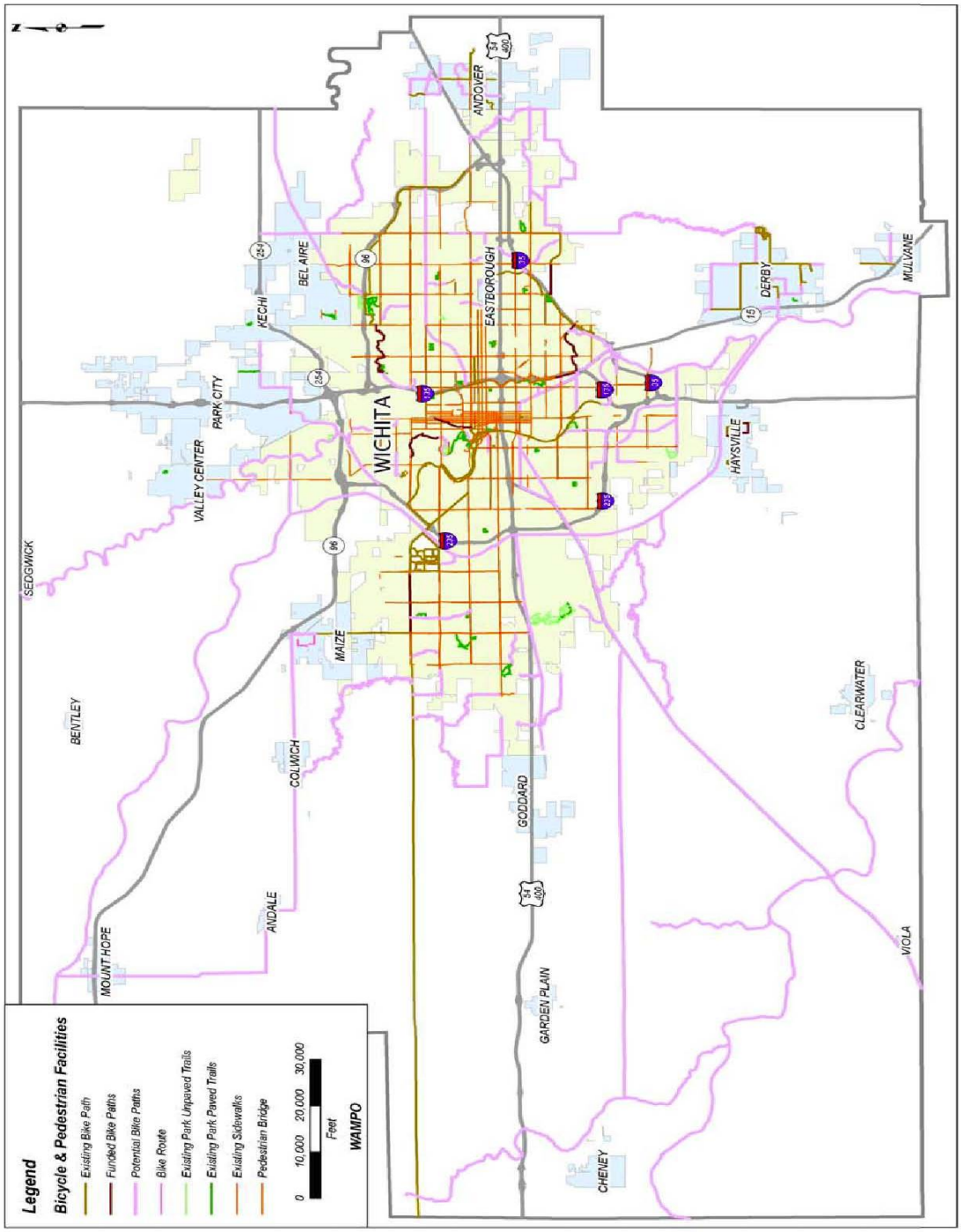

Figure 3.3-1: Bicycle and Pedestrian Facilities in the WAMPO Region

Bicycle and Pedestrian Facilities – Downtown Wichita

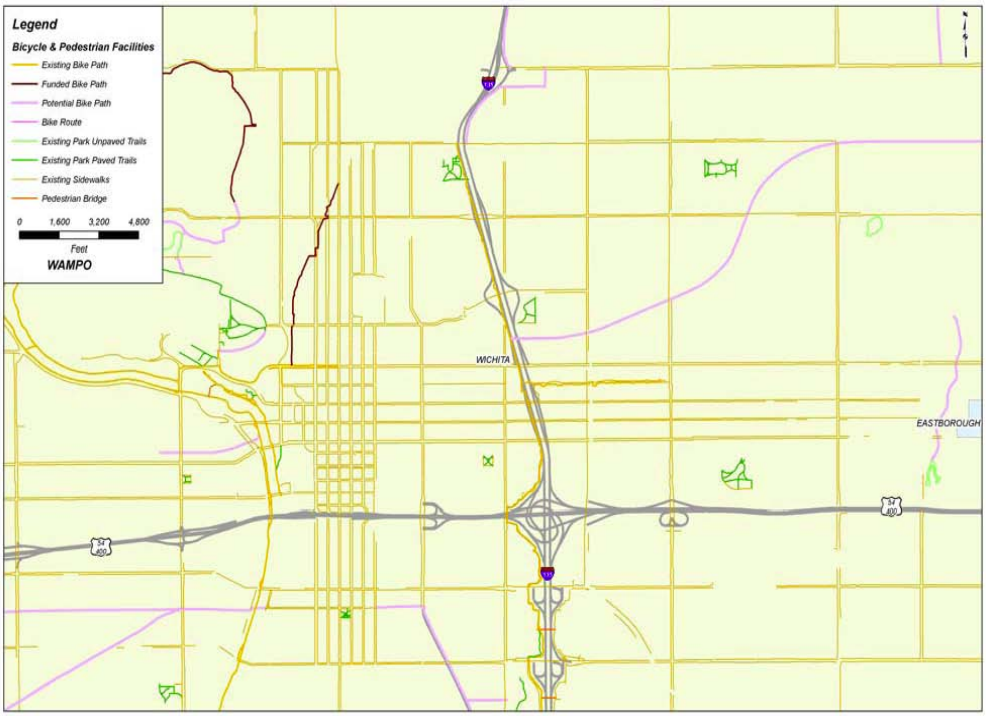

Figure 3.3-2: Existing Bicycle and Pedestrian Facilities – Downtown Wichita Insert

Park Trails

Trail is a general term describing any route, which is intended for use by bicyclists, equestrians, hikers, or joggers. Most of the parks in the region provide multi-purpose trails to support a rising quality of life for everyone. The Park and Open Space Master Plan for Wichita-Sedgwick County has established a minimum park standard goal at 15 acres / 1,000 residents. Currently, this ratio is at 13.2 acres / 1,000 residents. The plan's initial target of providing 50 miles of bicycle trails has been reached. The trails in most of the parks are open to both pedestrians and bicyclists. The adequacy or deficiency of such trails is discussed in the forthcoming sections of this chapter.

Future Trails

WAMPO proposed several bicycle paths in an on going attempt to minimize the gaps in the existing network. 13.2 miles are funded through various financial funding sources. In addition 355 miles are proposed to connect cities and towns.

Funded Projects

- 21st Street from N Ridge Road to N Maize Road
- Grove Park to Chisholm Creek Park
- Haysville Trail
- Historic Midtown Bike path/ greenway I -135 / Gypsum Creek Connection
- Keeper of the Plains
- North Riverside Trail
- Pawnee Trail (Woodlawn – Rock Rd)

Use of Facilities

During the months of June and July 2004, trail use observations were conducted at eight locations along the City of Wichita trails system. These observations were published in the August *Pathways 2004 Report* and included a reported total of 542 trail users over a combined 72 hours. This report documented the use of the trail system. It also compared the system to other city systems, finding the Wichita system to be fairly comparable to other Midwest systems.

Continued observations are desired. A recommendation is to install an automated counter system to determine user trends over the course of a day, weeks, months, and years and variability in use due to weather conditions. There are various opportunities for funding these types of projects that need to be researched in order to augment planning funds.

Regional Needs Assessment

Methodology

Integrating bicycling and walking as regional travel modes is one of the goals of WAMPO's 2030 LRTP. This requires better understanding of the needs and a methodology to strategically improve existing conditions. Several bicycle/pedestrian planning techniques are available to estimate demand and use of un-built facilities. Demographic and landuse information can be used to determine potential use of such facilities.

Mode Choice Decision Factors

The decision of whether to use non-motorized transportation modes usually takes into account the distance of the trip, perceived safety of the route and the comfort and convenience when compared to alternative modes (cars, bus, etc.) However, for many people, walking is the only option. According to the 2000 census data for WAMPO, 6,000 of all surveyed workers do not own a car. This represents approximately 2.5% of all workers and this percentage is higher in the urban areas. Furthermore, 3% of workers are senior citizens. For these people, access around their communities by foot is particularly vital, whether their trips are to the store, or a transit stop.

Most people are willing to walk 5 to 10 minutes at a comfortable pace to reach a destination. For approximately 2.6% of surveyed workers, it takes five minutes or less to travel to their work place. For those people, bicycling and walking facilities have potential to provide a significant portion of trips. Density of bicyclists and pedestrians is also a factor for planning additional facilities. Areas where people frequently use bicycles and walk create a sense of security and convenience.

Land Use Planning

Land use patterns, community design, and population density have a significant impact on the trip distance. Higher density communities or compact communities

with mixed land use patterns are known to have higher levels of walking. According to the 2000 Census data, areas with institutional land use are found to be carrying the highest number of non-motorized travelers. As an example, Figure 3.3-3 shows a generalized map of the City of Wichita land use zoning overlapped with bicycle/pedestrian facilities.

Defining needs

The goal of non-motorized facilities management is to connect gaps in the existing system while increasing opportunities to the public. The public can be targeted in many ways to include:

- Existing users without facilities;
- Prospective users with minimal or no facilities and;
- Physical lack of facilities.

Future Landuse map overlapped with Bicycle and Pedestrian Facilities

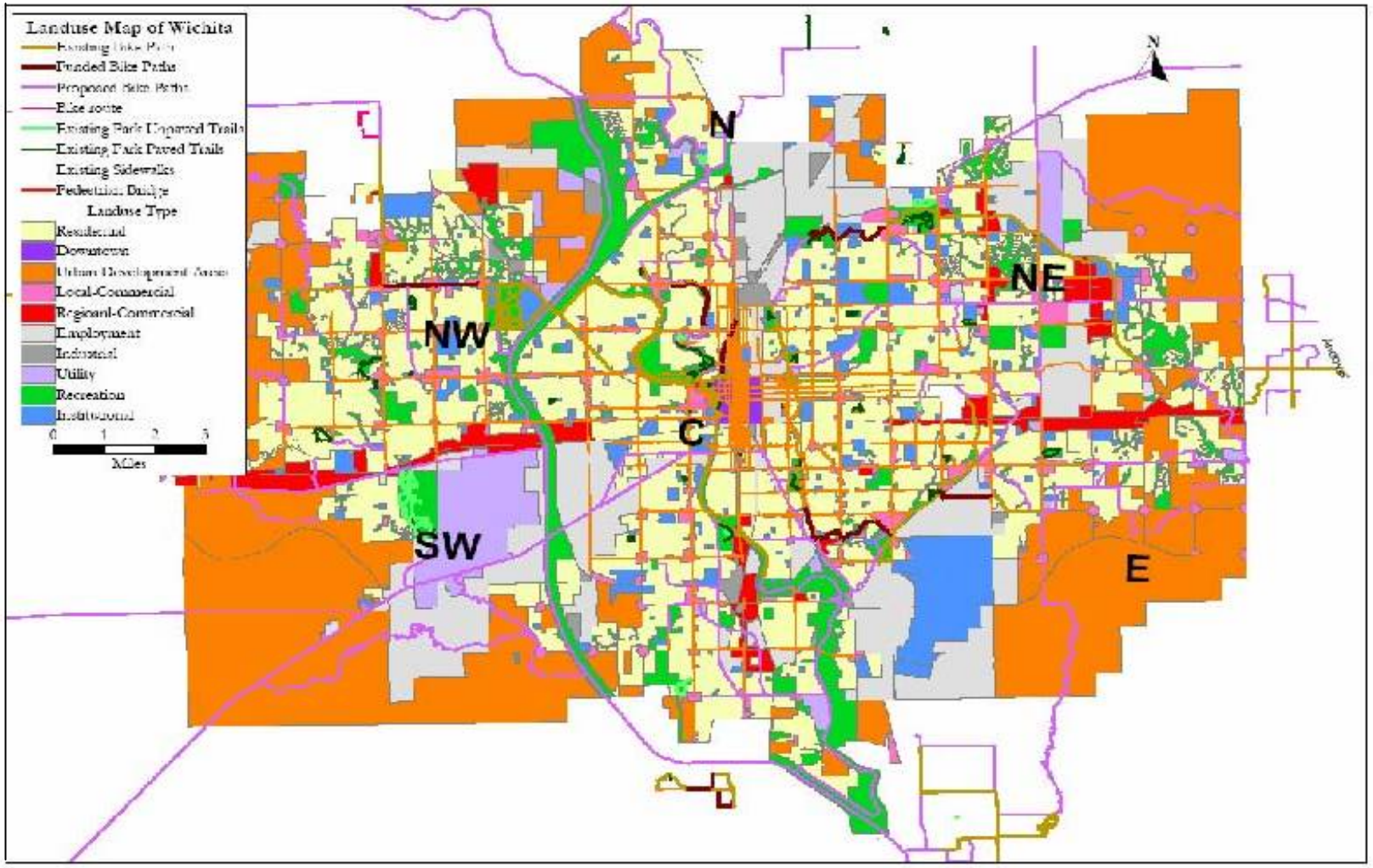

Figure 3.3.3: Example of Future Landuse map overlapped with Bicycle and Pedestrian facilities

These perspectives need to account for a specific area as well as adjustments for population within that area. It is suggested to use the eleven regional areas for the City of Wichita as defined in the Parks' Master Plan and group all other towns and cities to cover the entire region. These areas are shown in Figure 3.3-4 below and areas include:

City of Wichita	Remainder of WAMPO Region
North (N)	Northwest Region (NWR)
Northeast (NE)	Southwest Region (SWR)
Northwest (NW)	Northeast Region (NER)
Central (C)	Southeast Region (SER)
East (E)	
South (S)	
Southwest (SW)	

WAMPO Regional Area Divisions

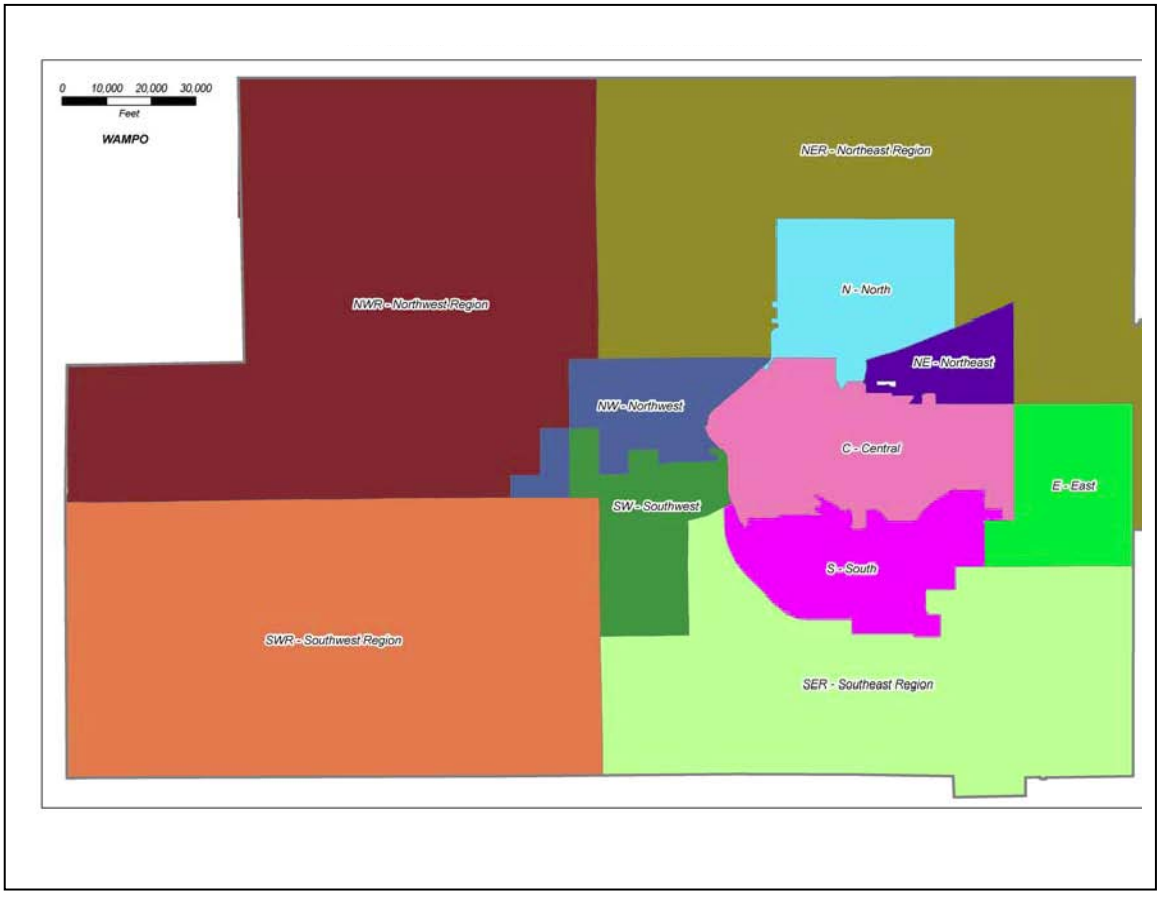

Figure 3.3-4: WAMPO Regional Area Divisions

To check the adequacy of number of miles of trails, a review of existing and committed trails network was conducted using 2000 census population. Future years of 2010, 2020 and 2030 were evaluated similarly with forecasted population.

Three ranges are suggested for comparison with the actual rate for the years in question, based upon existing and forecasted population.

- Absolute Minimum target of 1 trail mile per 7,500 population (As mentioned in the1996 Master Plan)
- Desired Minimum target of 1 trail mile per 5,000 population (Chosen for analysis in this report because 5000 is a reasonable compromise between 7,500 and 2,000)
- Desired target (eventually) of 1 trail mile per 2,000 population (National Recreation and Park Association Guideline)

Currently, the majority of areas in WAMPO region have reasonably good number of trail miles. The area with the most trail mileage (42.5 miles or 33%) also has the most population (182,000 or 35%). Two areas, SW and NWR have already achieved a desired target rate of one trail mile per 2,000 population. For year 2010, seven of these eleven areas will be close to that rate. the future years of 2020 and 2030 with the proposed bicycle and pedestrian network in place, eight of the eleven zones could achieve the desired target rate. Only three areas, C, NW and NE would still fall short of mileage to achieve the rate. These regions should be prioritized for bicycle and pedestrian facilities development.

Identifying Physical Gaps

To create an environment that makes bicycling or walking easy and a natural choice, the regional network should have continuous and connected pedestrian facilities that are adequately separated from fast moving vehicular traffic. Gaps in the existing system should be determined once the data is collected for all zones.

Making Connections

Circulation and access to shopping malls, schools, offices and mixed use developments should be analyzed to help identify opportunities. Safe and frequent crossing opportunities may be provided across freeways and arterials so as not to become barriers for pedestrians. Currently, WAMPO has two pedestrian bridges funded across the Arkansas River.

Targeting Opportunities

The Census Transportation Planning Package (CTPP) data helps to target areas of existing pedestrians and cyclists as well opportunities based upon duration of trips from a transportation perspective. A review of all workers who travel less than five minutes from home to work (by eleven regional areas) would help to target where facilities could attract more users. Providing good sidewalk and

bicycle facilities in these areas could attract these workers from other modes to choose a non-motorized travel mode. Locating transit facilities adjacent to work, residential areas, shopping and recreational facilities encourages bicycle and pedestrian trips. Another opportunity exists for those people without a car. In areas where car ownership is lower, improvements to non-motorized facilities can provide access and mobility.

Regional Projects

The regional projects are discussed in two categories; i.e. currently programmed projects and suggested priorities. The future trails system is essentially defined by the 1996 Parks and Pathways Master Plan. Additional work is suggested to determine priorities for the future trails system by including safety data, CTTP data, and grass roots support for facilities.

Currently Programmed Projects

The majority of the WAMPO bicycle/pedestrian projects are under KDOT's jurisdiction. There are seventeen projects totaling 11.2 miles at a cost of $4.4 million. Federal Transportation Enhancement funds account for approximately $3.2 million and local funds for $1.2 million. On an average the WAMPO TIP (2004–2006) projects local share is $63 million. Sidewalks at $450,000 represent 0.7 percent of money. The yearly totals for State projects vary significantly.

Unfortunately, the other projects listed in the TIP do not easily allow for a checking of potential pedestrian/bicycle enhancements included as part of reconstruction or street widening projects. Thus it is hard to adequately define and therefore take credit for what projects actually include non-motorized related improvements. This issue is also noted in the National Bicycle and Walking Study, Ten Year Status Report, October 2004.

From historical data and from future year funding for trails in the TIP, the average cost per mile is $320,000. The region would be able to construct 4.1 miles per year on average and it would take 85 years to complete building the proposed 355 miles. This estimate does not consider inflation or maintenance and/or replacement of existing facilities during that time frame. This implies that the funding for bicycle trails needs to be increased drastically if the goal of 355 miles is to be reached.

Suggested Priorities

The previous needs assessment section identified three categories of needs; filling in gaps, making land use connections and targeting opportunities. The suggested priorities must serve those needs and as such must balance financial issues as well as transportation and safety issues. Unfortunately little safety information is currently available that would allow the identification of specific

intersections or corridors that are experiencing a high rate of pedestrian or bicycle accidents. As better records become available, a review could be undertaken to determine where, if any, high accident locations exist and then determine appropriate corrective measures. At that time, the safety aspect ought to be included in determining regional priorities.

The needs assessment also identifies that there is a need both in terms of miles of trails per population and making connections with a transportation focus. This may mean that a balance is necessary to develop a system of both off-road and on-road facilities.

The financially constrained discussion above represents another wrinkle. If population forecasts indicate fast growth, the need for facilities increases at a faster rate.

Based on the regional areas analysis, an assessment can be made on progress in certain areas even if the entire region as a whole remains at a less than desired target rate. The rate of trail miles per population is meant as a guideline. If and when the future proposed network is built, the system should complete any physical gaps as well as provide adequate service and improve opportunities. Overall, this is a reasonable report card for the region under the existing and near term conditions. However, the future system of an additional 355 miles requires extensive capital.

While there are no easy answers to how priorities should be achieved in light of financial constraints, meeting practical and realistic goals is achievable. It would be best to have all regional areas meet the absolute minimum target rate.

For example, if it is assumed that all regional areas should have 1 mile per 3,500 citizens, then 23.0 miles would be needed throughout the region. Table 3.3-1 shows how those miles could be distributed throughout the eleven areas in the WAMPO region based upon such an assumption. Admittedly this approach is brief, but detailed estimates could be developed to allow a fair distribution of facilities while meeting defined overall goals throughout the region.

Rough estimates of user demand can be generated by assuming that potential users of trails would live within two miles of trails. A detailed analysis as per FHWA guidelines, public surveys, combined with this data would help to determine demand for facilities. Additional information on safety experience would be helpful. If it remains true to other national trends to have higher accident rates in minority population areas, regional areas C, N and NE should be targeted for additional improvements.

Miles of Trails Needed to Provide 1 Mile per 3500 Citizens

SUBAREA	Existing and Funded miles	Population 2010	Actual Rate	Miles needed Interim Target Rate of 3500
N	3	21,722	7,241	3.2
S	6	42,220	7,037	6.1
C	48.5	181,742	3,747	3.4
E	7.5	37,954	5,061	3.3
SW	10	13,432	1,343	
NW	19	73,812	3,885	2.1
NE	13	51,799	3,985	1.8
NER	6	22,924	3,821	0.5
NWR	17	11,304	665	
SER	16.6	46,021	2,772	
SWR	0	8,904		2.5
Total	**146.6**	511,834	**3,491**	**23.0**

Table 3.3-2: Miles needed for interim Target rate of 1 per 3500

Safety Data

Sidewalks that are too narrow and/or adjacent to moving lanes of traffic, and pedestrian crossings that are intimidating because of confusing signal indications, excessive crossing distances, or fast-turning vehicles, directly impact the perceived and the actual safety of the pedestrians. Bicyclists too should be encouraged to follow Kansas state traffic guidelines and ample street lighting should be provided. According to 2003 Kansas Traffic Accident Facts, reported by KDOT, Sedgwick County (includes all WAMPO towns and cities) had the highest number of pedestrian accidents in the State.

Additional accident data was collected from KDOT for the last five years for all of WAMPO region. Table 3.3-2 shows a summary of that data. Analysis of pedestrian involved accidents as a percent of all accidents shows that on average pedestrian and pedalcycle accidents account for 1.7% of all accidents. However, the percentage of fatal and injury accidents is significantly higher at 11.6% and 4.8% respectively. In 2004, the percentage of fatal accidents for pedestrian involved accidents peaked at nearly 16%.

In the City of Wichita alone, during the years 2000 to 2004, pedestrian involved accidents represent 2.0% of all accidents but 12.3% of all fatal accidents. Wichita also represents 78.4% of all accidents in the region, but has a higher percentage of pedestrian involved accidents at 88.9%. Other cities with this

disproportionate ratio of pedestrian involved accidents to all accidents include Derby. It should be noted though that Derby did not have any pedestrian involved fatal accidents over the five year period, but it had a high percentage of pedestrian involved injury accidents. Most of the other cities had no reported pedalcycle related accidents.

Motor Vehicle Accidents Involving Pedestrians

	2000	2001	2002	2003	2004	Average
All Accidents						
Wichita	7,969	9,087	9,539	7,982	8,086	*8,533*
Remainder of MPO	2,313	2,324	2,444	2,221	2,471	*2,355*
Total all accidents	10,282	11,411	11,983	10,203	10,557	*10,887*
Fatal	37	44	63	35	45	*45*
Injury	4,046	4,248	3,996	3,321	3,346	*3,791*
Pedestrian Involved Percentage						
Total	1.8%	1.8%	1.7%	1.6%	1.8%	*1.7%*
Fatal	5.4%	11.4%	11.1%	14.3%	15.6%	*11.6%*
Injury	4.5%	4.6%	4.8%	4.7%	5.3%	*4.8%*

Table 3.3-3: Accident Summary – Pedestrian Involved Percentage

Summary

Overall, there is a good potential to improve safety and thus improve the use of bicycle and pedestrian facilities. Many communities are interested in planning and constructing sidewalks. As suggested in this section, a regional needs assessment should be conducted on a regular basis.
A desired target rate of one trail mile per population should be developed after thorough analysis. This target rate can help prioritize projects and concentrate on individual regional areas. Considering the funded and approved trail projects, the WAMPO region as a whole will have a good number of trail miles by the year 2010.

To improve bicyclist and pedestrian safety in the region, the expenditure level for non-motorized projects would need to increase. The issue of balancing needs with financial ability should be addressed.